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 AND OF
THE INSTITUTIONS IN UNION.

110TH SESSION.]

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Announcements by the Council.

NOTICE TO INSTITUTIONS.

A copy of a Bill, containing brief particulars of the Examinations, has been forwarded to each Institution. This should be suspended in the Reading-room, or some other conspicuous situation.

NORTH LONDON WORKING CLASSES
INDUSTRIAL EXHIBITION.

This Exhibition was formally opened by Earl Russell in the Agricultural Hall, Islington, on Monday last, in the presence of an immense concourse of people, all of whom were admitted by tickets at the prices of 2s. 6d. and 1s. each. The noble Earl arrived at the hall at 3 o'clock, and was conducted to a platform by the committee of officers. On his taking the chair, the ceremony commenced by a choir of 1,000 voices singing the Old Hundredth Psalm, accompanied by the organ, which was played by Dr. Wesley, organist of Winchester Cathedral and College.

Mr. WATTS, the hon. secretary, read a report of the managing committee, composed of working men, stating the circumstances under which the Exhibition had been set on foot. They were encouraged, they said, to undertake it from the success which attended a Working Man's Exhibition in the south of London, and from a conviction that there was much talent among the working classes which lay dormant for want of fitting opportunities for its exercise and appreciation. They eventually resolved to form a North London Exhibition, including the districts of Clerkenwell, Islington, St. Pancras, St. Luke's, Hoxton, St. Andrew's (Holborn), and Bloomsbury, but not excluding exhibitors from other parts of the metropolis should the committee have sufficient space at their disposal. It was to consist of objects manufactured by the exhibitors, either as specimens of skilled workmanship, or examples of self-taught handicraft, and they had been greatly assisted in carrying out the project by local committees. They at length placed themselves in communication with the directors of the Agricultural Hall, who entered into the scheme in a friendly and encouraging spirit, and offered them the use of their large hall upon liberal terms. With the aid of Mr. Le Neve Foster, the Secretary to the Society

of Arts, they appointed adjudicators to award the prizes from among the council of that Society. The committee referred, in passing, to the success attending the guarantee fund for carrying out the objects of the Exhibition. The amount promised, if needed, was £350, £50 of which had been guaranteed by Miss Burdett Coutts, and £100 by Mr. Samuel Morley. The exhibitors were 866 in number, and the articles shown by them occupied 5,930 ft. of wall, 2,012 ft. of counter, and 1,750 ft. of floor. The classification adopted was as follows:—1st, professional workmanship; 2nd, amateur productions; 3rd, inventions and novel contrivances; 4th, mechanical models; 5th, architectural, marine, and ornamental models; 6th, artistic objects; 7th, ladies' work of all kinds; 8th, miscellaneous articles. These classes are thus represented:—Class 1, skilled, 233; 2, amateurs, 98; 3, inventions, 91; 4, mechanical models, 56; 5, marine, 30; and ornamental, 75; 6, artistic, 165; 7, ladies' work, 75; 8, miscellaneous, 85. It was impossible to refer to all who had kindly assisted in the undertaking, but special mention was made of Miss Louisa Pyne, Miss Leffler, Mr. Galer, Mr. Thomas, Dr. Wesley, Mr. W. H. Bellamy, and Mr. Glenn Wesley, for their kind and gratuitous services in the musical department.

At the conclusion of the report, the Chairman inspected the exhibition. On his return to the platform,

Earl RUSSELL said, he had to congratulate them on the exhibition which he had just seen. It had given him the greatest satisfaction to observe the works of skill and industry of the North London working classes, and they deserved the highest credit. It afforded him pride and pleasure to be the fellow-countryman of men who had so employed their time, who had exhibited the greatest ingenuity in the works that they had performed, and in that manner have done credit to the country to which they belong. Those who first conceived the thought of this Exhibition of Industry did but justice to the industry of their countrymen, and he congratulated them on the great success which had already attended their efforts. It was thus that this country gave another proof that the working classes of London are, as he believed, the highest in the world, the most distinguished in the works that they perform, the most ready to accomplish anything that might be set before them, and thus make this great community that which it ought to be—the head of the civilized world in all those works which betoken civilization and progress. He was happy to accede to the proposal when a wish was expressed that he should preside at the opening of this Exhibition, and he must say that he had

no conception that the works of industry which were to be shown would betoken so much skill and show such beautiful results of the operations of labour.

A special ode, appropriate to the occasion, written by Mr. W. H. Bellamy, and the music of which was composed by Dr. Wesley, was then sung by Miss Louisa Pyne, Miss Susan Pyne, Miss Leffler, Mr. Elliot Galer, Mr. Lewis Thomas, and the choir. At its conclusion prayer was offered by the Rev. Robert Maguire, M.A., Incumbent of Clerkenwell; and "I know that my Redeemer liveth," was sung by Miss Louisa Pyne.

Mr. DIGBY SEYMOUR, M.P., proposed a vote of thanks to the Chairman. He said, if anything could enhance the admirable arrangements of the committee under whose auspices the work had been undertaken and carried out, it was the selection of the noble and illustrious person who had presided at the opening ceremony. When they looked back on the career of Lord Russell, there was no public man, he thought, who had a higher claim on the gratitude of the working classes. During a long public life his name had always more or less been identified with the welfare and progress of the people, social and political, and no man had done more in his time to unshackle commerce and promote free trade, the benefits of which were now experienced in every grade of society. His labours had also tended to give a material impetus to the intellectual development of the working classes by the establishment of a cheap press. He concluded by proposing that the thanks of the meeting be tendered to Earl Russell for presiding at the opening ceremony of the Exhibition.

The motion having been seconded by Mr. GEORGE CRICKSHANK, was carried with acclamation.

Earl RUSSELL, in returning thanks, said he had himself been a working man from an early period of a long life. He remembered that when a measure was brought into Parliament by Sir Robert Peel for promoting freedom of trade with regard to many articles of art and manufacture, many of those whom it affected came to him (Earl Russell) and complained that while they were exposed to competition, and while their trade would be thrown open to all the nations of Europe and the world, the bread which they ate was taxed, and they wished him to oppose the measure. He then told them that in his opinion no such injustice could long continue; that if trade was thrown open to the competition of the whole world corn would not be taxed for many years, but that all would have the benefit of free trade. And so accordingly a few years afterwards the corn law was repealed. With that example before them he might well say, that while the working classes showed their present industry and skill whenever any question arose in which their rights and privileges were concerned, whatever was just and for the common benefit was sure to be sanctioned by Parliament in the end. They might depend upon it that this was a country in which, by means of discussion, by means of the Press, by means of Parliament, by means of public opinion expressed in a thousand ways, truth at last would gain the supremacy, and, under God, every evil would be abolished.

The choir and the assembly then sang the National Anthem, Miss Louisa Pyne taking the solo parts.

There was a concert in the evening, at which portions of the music used at the opening were repeated.

The committee decided at the outset not to offer pecuniary premiums. They are, at the same time, desirous that the prizes shall be worthy mementoes of the occasion, and valued by the holders as marks of distinction. The adjudicators are Mr. Thomas Winkworth, Mr. Peter Graham, Mr. D. H. Clark, Mr. G. F. Wilson, Mr. J. A. Nicholay, Mr. Digby Wyatt, and Mr. Le Neve Foster.

The Exhibition is open daily from 9 in the morning till 5 in the evening, admittance 6d.; and from 7 till 10 in the evening at a charge of 2d.

The number of paying visitors on the three days, Monday, Tuesday, and Wednesday, amounted to 39,213. Of these, 20,116 entered on Wednesday.

PRIMARY EDUCATION IN FRANCE.

General Morin, Director of the *Conservatoire*, recently delivered an address on this subject before the French Institute, when presiding at an important meeting of the "Five Academies." The following is a translation of the most interesting portions of this address:—

After having shown the interest which the public takes in the question of primary schools, and referred to the law of 1833, in which he pointed out the defects, the speaker showed the melancholy state of France, as compared with that of other countries, with regard to popular instruction. "We know," he said, "that in the whole of Germany and Switzerland, whatever may be the form of government or religion, law and custom both make primary education compulsory. The father of a family is never allowed, to the detriment of society, to deprive his children of early intellectual food, any more than of food for the body. It is also recognised everywhere that society ought to provide it for those children whose parents cannot pay for it for them.

"Definite laws and regulations establish this obligation. A special and strict watch is exercised to insure its accomplishment, which is further provided for by graduated penalties, which are, first, admonition from a magistrate or special authority; then a fine; and lastly, if necessary, imprisonment. These rules are as strictly observed in the Swiss Republic as in the Empire of Austria. The obligation is not limited to frequent attendance at the primary school from the age of six to that of fourteen years, but it is also extended to Sunday schools up to the age of sixteen or eighteen, unless the young man can prove that he is engaged in a higher class of studies, or can show a certificate from his spiritual director that he has learnt all that is taught in the school.

"It is instructive to notice that, in no way, does the obligation imposed on the father, to give his children primary instruction, interfere with his authority, nor with the choice of what he has them taught, since the parents are perfectly free in the choice alike of masters and of methods, and are only obliged to prove that their children really receive instruction. The fact of the education being obligatory does not imply that it must be gratuitous, as those opposed to this system aver; it is like a tax on the citizen in favour of society, as well as on the father for his children; and he is only excused from paying it when it is beyond his means.

"Further, primary instruction is so perfectly considered as a social duty, that those parents who have their children taught at home, are, as well as the other inhabitants, obliged to pay the educational tax until their children have obtained the age of sixteen years. In Prussia all heads of families have equally to subscribe for the salary of the schoolmaster, whether they have children or not. In Switzerland there is, in the canton of Zurich, a beneficial law which imposes on every bride coming to dwell in the commune, as well as on every new household which is set up, the obligation to make a wedding present to the treasury of the school, the minimum of which is fixed."

General Morin here quoted a passage from M. Cousin on the necessity of instruction for a free people, above all for a people where universal suffrage exists, and he then showed how compulsory instruction might be established. "Experience shows that it is not as difficult as one would think to oblige even all the children of a community to attend the primary school. The municipal and ecclesiastical authorities can exercise great influence in this respect, and obtain the desired result. Legal authority, exercised in so legitimate a cause, is readily accepted even in countries which are the least prepared for it. For instance, when the Prussian Government took possession of the Duchy of Posen, which then counted a million of inhabitants, and had only twenty primary schools, it introduced the obligation of attending the new schools which it established without the least resistance being offered, and

now every one there can read. In every place where it has been perseveringly insisted upon, such an obligation has been readily accepted, and has rapidly become a custom; we must allow, however, that its complete execution has sometimes met with difficulties which could not be immediately surmounted. In places where the habitations are very widely scattered, and the means of communication are difficult, as well as where the state of morals is low, real obstacles arise which must be taken into account. Thus, in Austria, while the real attendance at the schools is in the provinces of high and low Austria, of the Tyrol, of Bohemia and Moravia, 98·5 per cent. of the number of children, the proportion is reduced to 84 per cent. in Styria, to 72 per cent. in Carinthia, to 55 per cent. in Hungary, to 34 per cent. in Venice, and even to 20 per cent. in Croatia.

"But it is right to notice that there is this peculiarity connected with the diffusion of knowledge in the Empire of Austria, that the people of which it is composed speak nineteen different languages or dialects, so that it is necessary almost everywhere to teach in two different languages, German and the maternal dialect. We can also understand that the principle of nationalities is not much liked by a government which has so many different countries under its rule. In spite of these natural obstacles, and the difficulty of getting isolated populations to join in an intellectual movement, the principle universally exists. So that the exception astonishes us, when it does not present itself as the evident consequence of special circumstances. Thus the colonel of a regiment in one of the little German States, having found, in a contingent of 400 men, four who could not read, the fact was considered so extraordinary that an inquiry was instituted to discover the reason.

"Proofs of the success of the law are furnished by various statistics, which at the same time show the importance of the results obtained. Thus the commercial statistics of the Grand Duchy of Baden show that amongst those condemned to various punishments, that is, among the worst of the population, in 100 individuals of either sex, there was only an average of two men and five women who could not read or write. In Saxony, according to an official document, in 1,741 rural schools the average number of children which ought to attend them is 137 for each school, and the number of actual pupils is the same. Two schools, however, only have one pupil; the greater part have more than the legal number, from the presence of strangers who are not included in the census. In the towns of the same kingdom, which have 275 schools, the result is the same.

"In Prussia the number of children who go by choice to the primary schools, as compared with those who are compelled to attend, is 97·8 for the boys, 97·1 for the girls, giving 97·4 for the average.

We have not yet exact statistics of the schools in France to show how many children have really been at them every day, in summer and in winter. We cannot, therefore, make a comparison with regard to the attendance, analogous to that which can be made in Austria. This hiatus will soon be supplied by the documents which the Minister of Public Instruction has had collected, and then only shall we be able to judge the effects of the attendance being compulsory or free. And, what is still more important, the government will be in a position to recognise more precisely those departments in which its action may be more specially exercised to remove difficulties and overcome local resistance.

"But although attendance at the schools may be insured by the action of the law, it may still be asked whether the result obtained is really satisfactory, and what is in fact the per-centage of young people able to read and write amongst those who are compelled to attend the schools, compared to those of the same age who are not so compelled. Our knowledge on this subject is not so complete as one could wish. However, a few examples may be given.

"In Bavaria, amongst the young soldiers called to arms in 1864, the number of those who could only read and write imperfectly was an average of 8 per cent. In Prussia, the statistics of recruiting show that in 100 recruits arriving at the corps, there was only an average of three who could not read and write. In Saxony, the average number of those who can neither read nor write for the years 1847, 1848, 1851, and 1852, is 16·5 per cent. of uneducated.

"If we compare the results obtained in Germany with those which are carefully collected every year in France by the Minister of War, we are forced to acknowledge the inferiority of France in this respect, and the slow progress which we are making in primary instruction. Taking each year from 1828 to 1862 inclusive, it appears, taking the statistics of recruiting throughout the whole of France—

1st. That out of 100 men of 20 years of age, in 1828, there were 53, or more, who could not read nor write.

2nd. That at the time of the promulgation of the law of 1833 on primary instruction, there were 46 out of the 100 who were thus ignorant.

3rd. That after this beneficent and popular law had been in execution for 29 years, in spite of the continual pecuniary supplies given by the State, there were still in 1862 more than 27 per cent. of men of 20 years of age who could neither read nor write.

"If we represent graphically the results of this statement, we obtain a curve which may be said to give the geometric law for the decrease of ignorance. The melancholy slowness with which the number of young people who can neither read nor write decreases, is thus shown, in spite of the increasing resources that the communes, the Departments, and the state never cease to contribute to this fundamental part of public instruction. We see, in fact, that while the sum devoted by the State to primary instruction had risen from 100,000 francs in 1829 to 4,797,000 francs in 1861, that is to say, had become forty-eight times as much, and that the number of schools had been more than trebled, the number of young people of 20 years of age, who could neither read nor write, had only diminished in the ratio of 52 to 27, or less than half. This diminution, indeed, appears to become more and more gradual, in spite of the increase of expenditure; and it thus appears that unless other measures than mere increased expenditure and the establishment of new schools are taken, there is no hope of reducing the proportion of perfectly uneducated persons to 10 per cent., in less than fifty years.

"The statistics drawn up by the Minister of War, besides showing the general results to which I have referred, show the great differences between the per-centages of young men of 20 years of age who can neither read nor write, in the various departments of France. No local cause, however, such as the nature of the country, the occupation (whether agricultural or manufacturing) of the people, or their moral condition, can be discovered which explains the immense differences which exist in the proportion of educated persons in the various departments. For instance, the departments of Doubs and Gard, which figure in the first rank, are mountainous and agricultural, covered with forests, &c.; so are the departments of Arriège and Finistère, which stand at the bottom of the list. The department of the Meuse, which occupies the third line, has large valleys where cattle are fed, and it is the same with the Dordogne, which stands No. 81, and with Indre-et-Loire, one of the most fertile parts of France, which stands No. 68. The department of Haut-Rhin, standing No. 9, has as many manufactures as the Nord, which stands No. 56.

"On the other hand, the favourable moral influence of the clergy acts to as great an extent in the departments of La Bretagne and Le Midi, which are the most behind-hand in education, as in that of Bas-Rhin, which stands No. 3 on the list. The department of La Seine, with its numerous schools of various kinds, only stands No. 13.

It is true that there are some parishes there where there are five times as many children as the schools can find rooms for. In Paris itself, it appears that whilst in 397,069 workpeople of both sexes, whose state of education has been ascertained, there are only 12 per cent. who can neither read nor write; in certain trades, such as chemical works, there are 74 per cent. of workmen in this state of ignorance, while among the girls employed in the lucifer-match manufacture there was not one who could read or write.

"Among the general causes which, besides the absence of legal obligation, tend to influence unfavourably the state of primary instruction, one of the most injurious in the agricultural districts is the irregularity of school attendance at one season of the year as compared with another. Recent statistics on this point have not been drawn, but it appears that in 1829 and 1833 the ratio was as follows:—

Year.	Winter.	Summer.	Ratio of attendance in summer to that in winter.
1829...	969,340	543,529	0-56
1833...	1,200,715	696,208	0-58

Showing that the attendance in summer was little more than half of that in winter.

"One great cause of this is the carelessness of the parents, the want of attention of the authorities appointed to inspect the schools, and particularly the small interest that the teacher has in the real progress of his pupils under the present arrangements.

"The want of Sunday and evening schools during the winter, where the education of those who had already been taught as children could be continued, and where adults of neglected education might make up for lost time, is another serious evil. Field and factory labour would not interfere with attendance at such schools, and the expense of their organisation would not be heavy, as the teachers in primary schools might be employed in them at a small addition to their salary. Elementary education would thus be improved in its character, and a large number of young workpeople would be rendered fit to attend courses of lectures on technical subjects, which might then be established in the various towns with great benefit to the people.

"As to the very great number of children who work in the factories, the French law of 1831, under which they are allowed to work from the too early age of eight years, for eight hours out of the twenty-four, on condition that they attend some school either belonging to or distinct from the factory, is often evaded, to the great detriment of the physical and moral development of the population, and also of industry itself, as there is often great difficulty in finding intelligent overseers amongst the very ignorant workpeople. There are happily many honourable and numerous exceptions to this unhappy state of things, and the influence of the Industrial Society of Mulhouse, and of several heads of establishments, as well as the example of what is done so successfully in Austria and in Scotland, will lead, we may hope, in a short time, to a radical reform in this respect, and the rule will be adopted of dividing the day for children into equal parts, one of six hours devoted to work, the other to the primary school and to rest, or to the exercises so necessary to children. Up to this time I have only referred to the results obtained with the instruction of boys, because the only statement of the real effects of the actual organisation of primary instruction that we possess, is furnished by the Minister of War, and is obtained by the working of the law, which makes military instruction obligatory.

After passing in review all that has been done for the instruction of women, the speaker said, "That in spite of the continued growth of the budget allowances for primary schools, we must not conclude that on this head our country is more liberal than other countries in Europe. In fact, according to the official accounts of the budgets of the different European states, the proportion of sums

devoted to public instruction, and to military services by land and sea, is as nearly as possible as follows:—

STATES.	PROPORTIONAL PART OF THE BUDGET DEVOTED TO	
	Military & Naval Services.	Public Instruction.
France.....	0-295	0-011
Austria	0-270	0-019
Prussia	0-276	0-014
Bavaria	0-219	0-022
Wurtemberg	0-218	0-047
Saxony	0-214	0-037
Grand Duchy of Baden...	0-182	0-033
Kingdom of Hanover ...	0-128	0-013

"The preceding comparison shows us that France is less liberal with regard to education than many other States, and has not yet either organised elementary instruction, or instruction in technical industry, in nearly so complete a manner as most of the German States, so that we need not be astonished at its inferiority in respect of education which the statistical reports of the Minister of War reveal. If new sacrifices are demanded to complete, in a wise and practical manner, the organisation of primary instruction, in accordance with the law of 1833, everything leads to the belief that they will not be withheld. But, at the same time, we ought to remember that the progress of instruction is far from increasing proportionally to the expenses incurred and to the number of schools, and that, to these augmentations of material means, measures of another kind must be added.

"If our manners, if the national character will not submit to the legal coercion, which is used with so much ease and success in Germany and Switzerland, there may be found other means of obtaining the same result. In considering the elementary instruction which it is right to give children, as a debt due from the father and the citizen, ought we not also to consider the payment of teachers as a special and just contribution, which all the inhabitants who have the means ought to pay? If this principle be allowed, more efficacious measures than those which exist at present ought to be taken. The parent would be then more directly interested in making his child profit by the instruction which he was compelled to pay for, and thus attendance at the school would virtually be rendered obligatory by the imposition of this tax, instead of its being necessary to have recourse, as in Germany, to fines and imprisonment.

"A measure of this character has already been adopted in nearly half the departments of France, and the legal generalization of this measure, until now optional in each locality, would be a great step towards obtaining a more regular attendance at the schools, and thus materially promote the cause of education."

Proceedings of Institutions.

BANBURY SCIENCE SCHOOL.—The last report says that at the close of the fourth year a more marked success has been attained than in any former year. Five classes have been in operation during the year, viz.:—Mechanical drawing, conducted by Mr. Pidgeon; animal physiology and zoology, by Mr. Beale; physiological, structural, and economic botany, and systematic botany, by Mr. Beesley. The attendance at all of these classes has been good, and the conduct of the students satisfactory. During the session a close and lengthened inspection of each class was made by J. F. Iselin, Esq., one of Her Majesty's Science School Inspectors, who expressed himself as thoroughly satisfied with the methods of teaching employed. The results of this year's May examination by

the Science and Art Department are as follows:—47 students sat for examination, some in more than one subject. 10 out of this number sat in mechanical drawing, all of whom passed, obtaining 1 bronze medal, 7 prizes, and 3 hon. mentions. 27 sat in animal physiology, of whom 21 passed, obtaining 6 prizes and 9 hon. mentions. 4 sat in vegetable physiology, obtaining 1 bronze medal, 3 prizes, and 1 hon. mention. 11 sat in systematic botany, all of whom passed, obtaining 1 silver and 1 bronze medal, 6 prizes, and 3 hon. mentions. Whereas 70 per cent. of the students who sat for examination in the mechanical drawing class obtained prizes, the average per centage of prizemen on the students sitting in the same subject throughout the remaining schools of the kingdom was barely 23 per cent. Again, in vegetable physiology, 75 per cent. of the Banbury students obtained prizes against an average of 56 per cent. in the remaining schools of the country, while in systematic botany the per centage is as 55 to 34 in favour of the Banbury School. The above calculation takes no account of the medals gained by the students, of which there are 1 silver and 2 bronze offered for competition by the Department in each subject. The Banbury Schools have taken 3 of these bronze medals and 1 silver, the latter being the highest distinction attainable in any one subject. The results given above have not been surpassed, if indeed they have been equalled, by any other school, however successful; such high per centages of prizes have only been approached in one or two of the Irish schools, where the students are of a different and higher class, and the appliances for teaching far more complete. During the last session the Science School has been placed in Union with the Society of Arts, and seven of its students sat in the Examination held by that Society; five of these were successful in obtaining certificates of various grades. At the last annual meeting a resolution was adopted that a local fund should be formed to supply prizes in addition to those furnished by the Department. £7 was contributed for this purpose by members of the Central Committee and other friends of the School; this fund has been appropriated to the purchase of books, which will be given to the most successful of the students. The value of the Science School has received a prompt illustration during the past year. By making a persevering use of the advantages afforded him by the mechanical drawing class, one of its members has succeeded in raising himself from the workman's bench to the far higher position of a professional draughtsman. The prize for Local Herbaria, offered by C. Faulkner, Esq., appears to have elicited a good competition. The conditions of the competition were that the plants should be gathered within eight miles of Banbury, and that they should be deposited with the teacher of the class, before the end of June in the present year,—properly dried, mounted, named, and arranged according to the natural system. In awarding the prize, more value was to be given to rare plants, and especially such as were new to the locality, than to those of common occurrence. Three collections were sent in at the prescribed time. One contained 493 species of flowering plants, and gained 603 marks; another contained 507 species, and gained 585 marks; the third contained 495 species, and gained 590 marks. The prize, after a careful examination, was awarded to Reuben French, he having obtained the highest number of marks, because his collection contained the greatest number of new and rare plants. The other collections were, however, so very meritorious, closely approaching in number of marks, and even exceeding in number of specimens, that which obtained the prize, that the secretary and Mr. Beesley determined to give prizes of less value to these also, as a recognition of the intelligence and industry of their exhibitors. Mr. Cadbury's prize was awarded to Thomas Ward for the greatest number of species and neatness of arrangement; Mr. Beesley's was given to Alfred French.

Fine Arts.

ROYAL ACADEMY OF BRUSSELS.—M. de Keyser, recently appointed director of the Belgian Academy, has just pronounced a rather remarkable inaugural speech. After a few remarks on the characteristic differences of Greek and Roman art and the causes of the decline, which had become most complete about the time of Constantine, and on the long period that the debasement continued, because, according to M. de Keyser, no one, no school, took for basis the only eternal foundation of all art, the study of nature, he arrives at the revival in Italy, and dwells with artistic delight on the labours of the Tuscan school, the works of Cimabue, Giotto, and Masaccio, and the great artists of the next period, Michel Angelo, Raphael, and Leonardo da Vinci. But his chief subject is naturally the Flemish school, of which he says, it came into existence almost at the same time as that of Tuscany, and exhibited, especially at the outset, not only great depth of sentiment, but also great novelty in technical modes of expression. He then referred to the decadence of the Italian school, which had not exhibited any sign of revival for at least two centuries, and added, that though Flemish art had certainly had its periods of poverty, when bad taste, fashionable caprices, political misfortunes, and other circumstances sometimes seemed to threaten it with utter destruction of the traditions, which are its principles of vitality, that it had escaped from such disaster, and still possessed masters devoutly following in the paths of their ancestors of the seventeenth century. M. de Keyser concluded with an energetic protest against the idea of a school departing from its traditions, its original idea, and attempting to graft in its stock the taste and the methods of another and a different one, concluding with a declaration that, in his opinion, mural painting—of which, however, he spoke with the greatest respect—was utterly opposed to the spirit of Flemish art, of which Rubens might be taken as the most splendid embodiment. The artistic world agree almost unanimously with the new director of the Academy at Brussels, when he says, with laudable patriotism, that Belgium has taken a high position in the movement which is now going on, and there is every prospect of her maintaining the spirit of her traditions, and a high place amongst the schools of the present period. The many recent exhibitions which have taken place bear testimony to the foundation which exists for this proud claim and congratulatory anticipation.

PUBLIC MONUMENTS.—The people of Nice are about to raise a statue in memory of Massena.—A large and fine medallion of Rossini, modelled by H. Chevalier, is now being cast in bronze, and will be placed in the saloons of the Grand Opera and Théâtre Italien of Paris, if not in other lyrical theatres also.—Königsberg has raised a statue of its famous logician and critic, Emmanuel Kant, who was born in that town in 1724, and never quitted it till his death, in 1804. The inauguration was appointed to take place on the 18th of the present month. The only inscription on the pedestal is the surname of the savant—than which nothing could be in better taste or more effective.—The Academy of San Fernando at Madrid has accepted the plans of M. Médina for a monument to the great painter Murillo, which is to be placed opposite the Museum of Paintings, at the entrance of the Prado.

ARCHITECTURAL NOTES.—M. Viollet-le-Duc has just completed a beautiful chapel with crypt, in the style of the commencement of the thirteenth century, on the property of M. Florent-Lefebvre, Maire of Monchy-le-Preux, near Vitry, in the department of the Pas-de-Calais. The stone altar, the coloured glass, the lead and the iron work are of great delicacy. The consecration took place a few days since.—The new building of the Hungarian Academy at Pesth is to be decorated with statues of Leibnitz, Newton, Descartes, Galileo, and Raphael, in terra-cotta.

Manufactures.

EXHIBITION AT BAYONNE.—A Franco-Spanish International Exhibition has been held here, which has only recently closed. The building was a temporary structure of wood and canvas, lighted from the top with a lofty portico of the same material, decorated with the arms of France, Paris, Madrid, and the Spanish provinces represented by their products. It was announced to open on the 10th of July, but was not completed for some time after the official inauguration. In the large courtyard, by which the public entered, stood a crucifix of colossal size in blue granite, the production of a quarryman named Henrot. Some well-known Paris houses sent some fine specimens. Among the goldsmiths' work Froment-Meurice exhibited portions of a dinner service made for the Pasha of Egypt, and valued at 600,000*f.*; a *ciboire*, or Communion cup, from the design, it is said, of a Polish lady, presented by her to the Church of Pau; a rich and exquisitely sculptured chalice; a second one, encrusted with rubies and turquoises; and a tea service for the Empress of the French. Christofle, of Paris, also sent specimens of silver-gilt articles of the same kind; Clesinger and Fremiet their bronzes, and in iron-work groups of statues for fountains, dogs and horses' heads as ornaments for kennels and stables. One gallery was devoted to the Aubusson tapestry of Requillart and Cloquat and porcelain of Bordeaux manufacture. Tissues of various kinds, house furniture, musical instruments of every variety, metals, ores, agricultural products, ploughs of many forms, machinery, cotton from Algeria, minerals, grain, specimens of hard wood from Africa of dark colour and capable of high polish, cedars of Lebanon 400 years old, specimens of Paris pottery, imitations of Italian majolica, &c., filled several galleries. Though the Exhibition professed to be Franco-Spanish, yet Spain did not contribute much in the way of natural products. There were in the agricultural section a few samples of Malaga and Logrono wines, as well as wheat, rye, and maize of Cordova. In an annexe was a flower and fruit show. There was a Department of Fine Arts, but the pictures do not appear to have been generally of the highest class. There were some good portraits, a dance in the court-yard of a posada by M. Fieros, and a picture of the cathedral of Burgos and a chapel of that of Toledo by the same artist. In this department Paris contributed two portraits by Ricard, sketches of scenery in France and the East, by MM. Courbet, Corel, and Brest, and, as a specimen of historical painting, Corneille reading one of his tragedies in the Hôtel Rambouillet. A Neapolitan beggar-boy, by Bonuat, of Bayonne, attracted much attention. Bordeaux and Lyons sent some good landscapes, and among other objects of art were sketches in water-colours by the late Eugene Delacroix. At first the price of admission was over 2*f.*, but towards the close it was reduced to 50*c.*, except on one day in the week, when a franc was charged.

AGRICULTURAL MACHINERY IN AMERICA.—The use of machinery is largely on the increase. The corn is now planted, cultivated, cut, threshed out, taken to market, warehoused, and loaded into vessels by machinery. A boy with a rolling cultivator can do the work of twenty men with the hoe, and do it better. A new binding machine, which uses wire, has been introduced, with the following results as compared with hand labour:—

By MACHINE.		By HAND.	
	dols.		dols.
One binder, per day...	2 00	5 binders, 1 day each	10 00
Board	0 50	Board, 1 day each...	2 50
20lbs. wire	5 00		
	7 50		12 50
			7 50
Profit on machine			5 00

EARL GRANVILLE'S IRON WORKS.—Extensive additions are being made to Earl Granville's Ironworks, at Etruria, by the erection of a large number of puddling furnaces and rolling mills. The new works will occupy both banks of the canal, and are close to the Hanley branch railway.

Commerce.

THE PETROLEUM TRADE.—The shipments of petroleum from New York during the present year to all parts of the world amounted to 12,943,486 gallons, against 13,491,877 in 1863, being a falling-off of 443,391 gallons. The shipments to Liverpool during the present year were 499,645 gallons, against 1,648,447 in 1863, to London 1,644,099 gallons against 1,646,447, in 1863, to Glasgow 317,388 gallons against 350,079 in 1863, and to Cork 2,129,213 gallons against 1,193,569 in 1863. The shipments from Boston this year were 946,618 gallons against 1,332,779 in 1863, from Philadelphia 4,903,275 gallons against 4,288,646 in 1863, from Baltimore 603,889 gallons against 728,571 in 1863, and from other ports 2,271 gallons against 288,643 in 1863; making the total shipments from the Western Continent in 1864, 19,403,989 gallons against 20,102,316 last year. The importance which this article is taking in France may be judged from the fact, that in the first seven months of the present year the total quantity imported was 9,795 tons (it is counted by weight), and that all, with the exception of the insignificant quantity of three tons, was taken out of bond for consumption. Of the 9,795 tons 1,565 arrived from England, 1862 from Belgium, 8,039 from the United States, the rest from other countries. The estimated value of the whole was in round figures 5,300,000*f.* (£212,000). The recent modification in the import duties in Italy will, no doubt, lead to the introduction of this oil into that country on an extensive scale also.

WALLACHIAN PETROLEUM.—A late number of the *Polytechnisches Journal* speaks of a new outlet of earth oil in the rich and remote province or principality of Wallachia. The German journal, after warning commerce to remember that the oil wells of Pennsylvania and Canada have a way of suddenly going out, "thanks, in a great measure, to the indiscriminate way in which rich mother Earth is so bored and tapped, as to make it easy for the gas to escape, by which the petroleum would else be forced up, or else for water to get in and flood or choke up the springs," goes on as follows:—"But there are other petroleum fields fast coming into the market. Not to speak of the Burmese Rangoon oil, which has long come to England as ballast, and is used in many German refineries, in January of the present year, the first cargo of Wallachian oil reached London. It was of 280 tons, and the company which brought it have closed a contract to deliver 20,000 tons in the year 1864. A second "Wallachian Petroleum Company" has since been formed. Two specimens of the Wallachian oil compare as follows with an average quality of Pennsylvania:—

Qualities.	Pennsylvania Oil.	1. Wallach.	2. Wallach.
Colour	Greenish Brown.	Brown.	Dark brown.
Fluidity (water=1)	0.73	0.68	0.09
Specific gravity.....	0.813	0.840	0.894
Smell	Moderately strong.	Strong and unpleasant.	Not very strong.

The general result of Dr. Otto Buchner's analysis is, that the Wallachian product is a valuable contribution to commerce and industry, although he does not think it has demonstrated its fitness to compete with the petroleum of Pennsylvania. Dr. Buchner, however, has not found his experiments confirm the assertion of American analysts, that the lighter Pennsylvania oils of a specific gravity of 0.80, gives 90 per cent. of burning oil. His highest result has been 70 per cent., of which from 15 to 20 per cent. was of benzene.

THE ADULTERATION OF COTTON IN INDIA.—At a recent meeting of the Glasgow Chamber of Commerce, Dr. Forbes Watson spoke on the supply of cotton from India. The cotton trade, he said, was in a very unsatisfactory condition. The cotton grown in India was very much superior there to what it was when seen in this country. When it arrived here it was very dirty, and this arose mainly from the fact that the producer had no interest in producing a good article; he got as much for dirty cotton as he got for clean. Now, unless some measures could be adopted to produce it clean, he did not see much hope for the future; and his impression was that, when the war was over, they (in India) were likely to go back into their old position. The Indian cotton was not gathered dirty, but it suffered from dirt being fraudulently put amongst it while it was being conveyed between Goojerat and Bombay. Portions of the cotton were taken from the bales, and stones, dead animals, or water, substituted. A bill had been passed to grapple with this fraudulent dealing, and he had no doubt this measure would do good; but they required something more. They had got European houses in India purchasing good cotton, and sending it home to this country in their own name. If these houses could grasp the whole cotton trade of India, and the European agents be brought into contact with the producers, then he was in hopes that good would result, but at present this was not practicable. He thought if there were agents in the interior of India who had a knowledge of cotton, and who could point out from examination where the good cotton and bad cotton was produced, it would have a good effect. What they wanted was, something that would produce rapid action; and he was of opinion that this could be best effected by the thorough classification of cotton by skilled classifiers—the pick of the men from brokers' offices here—who would be paid high salaries and be above temptation. If they had a system by which these men would be appointed to classify the different bales, he believed they would bring about all that was required. The merchant would only buy cotton after it had been classified and passed through the press. He believed that a system could be introduced for a thorough sampling of the cotton, and it was for the members of the Chamber to say how it was to be carried out. An association might be formed for the purpose, but probably it would be better for the Government to undertake the work.—Mr. Dunlop said it would be a most desirable thing if the length of the staple could be improved. It was grown on a very small scale, and cotton was the worst paying crop they could raise in that country. That was the reason the high prices had not had the effect it was supposed they would have. They were now giving six or seven times the price, but they had not got either the quantity or the quality; the price had not had the effect of bringing good cotton into the market, but the quantity had improved. It was quite apparent that there had been no improvement in the handling of the cotton in India, while the cotton imported from China was remarkably well cleaned. It was a matter of very great importance that the cotton should be improved, and he thought they were not likely to get it well assorted unless something like what Dr. Forbes Watson had proposed was carried out by the Government.—Mr. Galbraith concurred in the remarks made by Mr. Dunlop; and after a short discussion, the matter was remitted to a committee to consider it and report, and communicate with Dr. Forbes Watson on the subject.

Colonies.

THE (NATAL) NEW PUBLIC OFFICES proposed to be erected at Maritzburg are estimated to cost £18,000 altogether, and are plain but substantial in character.

NEW ZEALAND.—An atlas has lately been published

containing six geological maps of New Zealand, with descriptions, by Drs. Von Hochstetter and Peterman, published at Gotha the end of last year. The first of the series is a general chart of the islands, indicating the localities of gold, copper, chrome, iron, sand, graphite, coal, nephrite (on the west coast of this island), and the active volcanoes, with an enlargement of the Auckland Isthmus. The second takes in the southern part of the province of Auckland, and purports to be a complete chart, showing all the various formations, with enlargements of the Tampo and Lakes district. The third map is that of the Isthmus of Auckland, showing with great clearness the extent of volcanic country and the peculiar volcanic hills which stand like a skin eruption on the level surface. This is the map which Mr. C. Heaphy, of Auckland, is accused of having pirated from Dr. Von Hochstetter's copy in his charge and sent to the Geographical Society as his own. The fourth map comprises the districts of Aotea and Kawhia, on the west coast of the same island. The fifth is a map of Rotomahana, the hot springs and the adjoining district. And the last is the province of Nelson. Though all the descriptive part of these maps is in German, they will be found to convey abundant information to the student of any country, inasmuch as science, which is of no nation or tongue, has here set her marks in unmistakable colours. Dr. Von Hochstetter is ready to allow both this and other evidences of the work to be open to any one approaching them with an enquiring spirit.

COAL AND WATER SUPPLY AT NELSON.—Two bills have been prepared by the Nelson Government for this purpose. The object of the coal bill is to authorise the Superintendent to raise a loan of £50,000 for the purpose of opening and working the mines in the province. This loan it is proposed to raise by debentures of £100, bearing 8 per cent. interest, payable half-yearly out of the revenue of the province. A sinking fund of £2 per cent. per annum is provided for the liquidation of the debt, such sinking fund to be invested in such manner as the government shall direct. The bill contains another clause not bearing specially on the coal loan, but still of importance to that loan, as showing that the government desire to see their small existing liabilities wiped off, and this will afford further security for the new loan should such be deemed necessary. The total debt of the Province of Nelson, after deducting the share falling to be borne by the now distinct Province of Marlboro', is £21,500. To liquidate this debt a sinking fund of 10 per cent. is now proposed. The loan of £20,000 for water works is proposed to be raised on the same terms as the coal loan, by £100 debentures, bearing 8 per cent. interest, for which and for the principal (which is payable in 30 years) the revenue of the province is to be pledged. There is a marked difference between the two loans. The coal loan is decidedly for an object of provincial importance embracing all interests, commercial and agricultural, rural and urban. The water works is purely local, and affects beneficially only a limited number of the city inhabitants, while, should the bill pass, many will be subjected to a heavy rate for water from which they gain no advantage whatever.

RAILWAYS IN NATAL.—A colonial paper says the nominal capital of the Natal Central Railway Company is subscribed. It proposes to construct a line of railway suited to general traffic from Durban to Maritzburg; this line is to be carried round by the Isipingo and between the Umlaas and Illovo Rivers to the capital of the colony, a distance of about 70 miles. But the precise line of route must not be viewed as finally fixed, and should any shorter and more direct route than that at present surveyed be pointed out, the Company will gladly adopt it. In the Bill submitted by the Company distinct provision is made for an alternative line for the last fifteen miles of the distance to be traversed, that is, for the portion nearest Maritzburg. A line 50 or 60 miles long would be worked at much less annual cost than a line 20 miles longer, and

which passes through country that would for some time to come present few inducements in the shape of intermediate traffic warranting a deviation. Upon this line a government guarantee is asked by the Company of 6 per cent. on the capital expended. That capital is nominally fixed at £600,000, but presuming the line should be 70 miles in length it might be £50,000 more. This guarantee, then, may be looked upon as essential in one shape or other to the construction of railways in Natal. And in return for this concession the government must also exact several necessary conditions. Power of supervision is maintained over the working and regulation of the line; thus a check is placed upon extravagance, needless expenditure is curtailed, and the Company is compelled to work the line at the minimum cost. But this is not all. One very important feature of the system, and one that has been almost wholly overlooked, is that the sums paid by a colony towards the guarantee are not lost for ever. They come back to the exchequer. Whenever the line pays more than the guaranteed per centage, the Government steps in and shares these profits. This may be confirmed by citing the case of India; there, up to the 31st of December, 1861, the Government had paid altogether on account of guarantee £6,286,895; but it also had received back and had to place against that £1,250,000 sterling. This, too, was at a time when few of the lines constructed were completed—when few of them were yet in a position to make returns. There are, of course, other concessions given in addition to a money guarantee, such as grants of land or mining rights. These are what the coal company ask, and it seems probable that an Overberg Railway would be cheaply obtained at a sacrifice, say of 600,000 acres, of waste land, and of a mining monopoly for twenty years over a certain area of country. Unless there are rapid means of transport, and a stimulated stream of immigration, the land must remain waste, and the mines must be undeveloped for years to come.

Obituary.

THE DUKE OF NEWCASTLE died on Tuesday evening, the 18th inst., after a protracted and severe illness, at Clumber Park, Notts. Henry Pelham Fiennes-Pelham-Clinton, K.G., fifth Duke of Newcastle-under-Lyne, Staffordshire, twelfth Earl of Lincoln, Privy Counsellor in England and also in Ireland, one of the Council of the Duchy of Lancaster, Lord Warden of the Stannaries, and Lord Lieutenant and Custos Rotulorum of Nottinghamshire, was the eldest of the six sons of Henry, fourth duke, by his wife Georgina Elizabeth, daughter of the late Edward Miller Mundy, Esq., M.P., of Shipley Hall, Derbyshire. He was born in Charles-street, Berkeley-square, on the 22nd of May, 1811, and was educated at Eton, and Christ Church, Oxford, where he took the usual B.A. degree in 1832. He was returned to Parliament at the general election of December, 1832, as one of the members for the Southern Division of Nottinghamshire. He entered the Lower House of Parliament as a Conservative. He voted against the ballot, the removal of Jewish disabilities, the admission of Dissenters to the universities, the revision of the pension list, and the limitation of Parliament to a three years' duration, and supported the corn laws and the Church Establishment in Ireland. He married, in 1832, Lady Susan Harriet Catherine Hamilton-Douglas, only daughter of the late Duke of Hamilton and Brandon. He had five children by this union—a daughter, Lady Susan Charlotte, now the widow of Lord Adolphus Vane Tempest, and four sons, of whom the eldest, Henry Pelham Alexander, Earl of Lincoln, was born in 1834, and married in 1861 Henrietta Adela, daughter and heir of the late Henry Thomas Hope, Esq. On the formation of the first Peel Ministry, the late Duke, then Earl of Lincoln, held office

as one of the Lords of the Treasury; and when, after Sir Robert Peel had been six years out of office, that Minister returned to place in September, 1841, the first Commissionership of Woods and Forests was given to Lord Lincoln. This he relinquished in January, 1846, on accompanying the Lord Lieutenant to Ireland, as Chief Secretary, a post which he resigned when his party retired from office in the following month of July. The Earl of Lincoln, owing to the gradual change in favour of Liberal opinions, which came upon him, felt obliged, in February, 1846, to vacate his seat for South Nottinghamshire. Some months afterwards, however, a vacancy occurred in the representation of the Falkirk Burghs, for which he was returned; and this constituency he represented until his removal from the Lower to the Upper House of Parliament, in January, 1851, as Duke of Newcastle. In December, 1852, he accepted the post of Secretary of State for the Colonies, which he exchanged, in June, 1854, for the then newly-created post of Secretary of State for the War Department. In that capacity he had to bear much of the odium attaching to the Aberdeen Cabinet because the army, and especially the commissariat, was mismanaged during the early part of the Russian War, and he therefore retired from the post on the House of Commons assenting to Mr. Roebuck's motion for a parliamentary committee to inquire into the state of the British army before Sebastopol. He did not again take office until 1859, when he returned to his former post at the Colonial Office, which he finally resigned some months since on the ground of failing health. When the Prince of Wales paid a visit to Canada, the Duke of Newcastle was selected to be the companion of his tour. His Grace was elected a member of the Society of Arts in 1853.

Publications Issued.

THE FRENCH ACADEMY OF INSCRIPTIONS AND BELLES-LETTRES, &c. (*L'Ancienne Académie des Inscriptions et Belles-Lettres*), by M. Alfred Maury.—This is a curious history of the early periods of the academy by a very competent writer. Established in order to remodel the whole system of history, the academy certainly commenced its operations in a very modest manner; it composed the devices for the medals struck in the time of Louis XIV., and for the monuments erected in honour of the Grand Monarch. Its first attentions were bestowed on numismatics and lapidary work. Somewhat later the King employed the new academy to choose designs for the tapestry of the royal palaces, and to compose the programmes of the fêtes and ceremonies at Versailles. In time, however, its sphere of operation became wider and more worthy; the academy took up the study of ancient coins and the subject of mythology; but in the eighteenth century the difficulties which surrounded those subjects were enormous. The church opposed these inquiries, and historic dogmas stood in the way at every step. It was in 1735, that Ellie Blanchard scandalised his colleagues by reading a paper on "Magical Exorcisms;" they called out, in terror:—"You are walking on flames covered over with a deceitful crust of ashes!" Lévesque de Pouilly was denounced as atheist and libertine for daring, before the era of Niebuhr, Beaufort, and Arnold, to doubt the facts of the early histories of Rome. Not to believe in Romulus and Remus was, at that time, treason and blasphemy. Fréret was absolutely flung into the Bastille by one of his own associates in the academy for having proved that the ancient Francs served in the armies of Cæsar. At length, however, the academy discovered the right path and succeeded in following it; archæology became an admitted and even a popular study. Ancient inscriptions were deciphered, and the history of old monuments thus evolved; the oriental languages were taken up and the field of philology thus

widely extended; and Sanscrit was found, or supposed to have been found, to be the matrix, the typical form of the whole family. The learned author has grouped the main facts of the biography of the academy, during two centuries, together with great skill, in a single volume, which will doubtless be highly popular with the greatly increasing class of archæologists and antiquarians. Some of the early entries are amusing enough. For instance, Nicholas Henrion, one of the early members of the academy, invented a system by which he could calculate the exact bodily stature of the patriarchs and demi-gods; the result of the application of this standard was to prove that Adam was 123 feet 9 inches high, Eve 118 feet 9½ inches, Noah only nine feet less, Abraham not more than 27 or 28 feet high, Moses 13 feet, and Hercules 10 feet. We may well say, if we credit M. Henrion, that there were giants in those days, and we have since been growing "small by degrees, if not beautifully less." M. Maury either has brought out, or is about to publish, a similar volume containing the chronicles of another academy, that of the sciences.

Amongst other works just published in Paris are the following:—

L'HISTOIRE DE LA SAGESSE ET DU GOUT, from the earliest time of Greek civilization to that of Socrates, by A. Morel, 8vo.

LA PHILOSOPHIE INDIVIDUALISTE, a study of the works of Humboldt, by Challemlacour, 18mo.

LES OUBLIES, a life of Bernard Palissy, by Louis Andiot, 12mo.

M. Leneveux, a gentleman of philanthropic views, commenced some five years since the publication of a series of small books at 60 centimes each, under the generic title of the *Bibliothèque Utile*, and has devoted himself to the object with great energy, in spite of all kinds of difficulties and discouragements. The projector has, however, obtained the aid of several eminent writers, well known as friends of the cause of popular education. The whole of the works published are original, and amount at present to thirty-six volumes, M. Leneveux's intention being to carry it to a hundred. The scientific portion includes "Astronomy," by Professor Catalan; "An Introduction to the Study of the Physical Sciences," by Professor J. Morand; "History of the Earth," by Léon Brothier; "Elements of Health," by Dr. Louis Cruveilhier; and other works on chemistry, pneumatics, mechanics, and medicine.

Notes.

GREAT CENTRAL CATTLE MARKET AND ABATTOIR FOR PARIS.—The extension of the limits of the City of Paris has disarranged the old arrangements for the slaughtering of cattle, which is not allowed except just at the outskirts, and most of the old abattoirs have been pulled down, and others rebuilt beyond the fortifications. This is, however, but a temporary measure, as, before long, there is to be but one great abattoir for the whole of Paris. This establishment will also be in connection with one great cattle market, which is to replace those of Poissy, Sceaux, and La Chapelle. The joint establishments will be at La Villette, close to the canal of that name, and to the circular railway, which will shortly be completed, when it will form a means of junction between all the lines of railway having termini at Paris, as it already does to three or more. The underground works of the great abattoir are already completed, with their system of drains terminating in the canal above mentioned. The buildings themselves are also raised some yards above the ground; they include 407 scalding-houses for 1,200 butchers, with vast pens for cattle and sheep. All the calves sent to be killed are to be examined by competent inspectors, and those promising to make good cows are

to be set apart for sale, to be purchased in fact by the establishment for re-sale to private individuals. The market is to be erected by a company, which will, for a certain number of years, receive a toll on all the cattle sent to market. It is expected that this new establishment will effect a great economy in the article of butcher's meat, as at present the animals have to be sent for sale to Poissy, Sceaux, or La Chapelle, thence to the various slaughter-houses around the city, and afterwards to the butchers, whereas, when the new market and abattoir are completed, the graziers will send direct to it, and there will remain only the carriage of the meat to the butchers within the city. There is an importation into France of cattle from Germany, Hungary, Servia, and the Danubian provinces, and the cost of conveying a bullock from Vienna to Paris is no less than 62 francs (£2 10s.); the reduction of the expenses in the case of French breeders and feeders is expected to have a very beneficial effect on the home trade.

THE INTERNATIONAL EXHIBITION AT OPORTO.—A crystal palace was commenced at Oporto in 1861, the first stone being laid by the devoted King Pedro V., and is now nearly finished. It is proposed to hold an international exhibition therein, and Don Fernando, the father of the King, has been placed at the head of the commission for carrying out this intention. It is said that the Exhibition is to open in June next, but this will scarcely afford time for sufficient notice.

OYSTER EXHIBITION.—Doctor Anatol Gillet de Grennion is engaged in giving a series of lectures on maritime culture at the Jardin d'Acclimation in the Bois de Boulogne, Paris, and one of the lectures being on ostriculture, an invitation was addressed to the proprietors of the great oyster beds of Regneville, the Isle of Tridy, Concarneau, La Rochelle, the Isle of Ré, Marenes, Arcachon, and other places, to send each not less than twelve dozen of oysters for public exhibition on the occasion. A report is to be made thereon and published in the journals.

COOKING WITHOUT FIRE.—M. Babinet, of the French Institute, has laid before the Academy the result of his experiments in this direction. His recipe is:—Place your food in a black pot, cover it with a pane of glass, and stand it in the sun. The water soon boils, and the food is said to be of better flavour than if cooked in the ordinary way.

MEDICINAL PLANTS.—Mitcham produces annually from 30,000 to 40,000 bushels of roses, and about 11 tons of chamomile flowers. Lavender yields from 10 lbs. to 20 lbs. of oil per acre. Four hundred of chamomile flowers are about the yield per acre, giving from 8 to 10 lbs. of oil. Penny royal gives about 12 lbs. per acre.

Correspondence.

DWELLINGS FOR THE LABOURING CLASSES.

SIR,—I request you to record in the *Journal of the Society of Arts*, for future reference, the accompanying observations of Mr. Gladstone on the working of the Factory Acts, which he delivered recently at Bolton, at the opening of the Farnworth Park, the gift of Mr. Barnes to the town. They are useful in their bearing on adult education, which the Society promotes, but are especially so in reference to the dwellings of the poor, which I trust it will become the work of the Society to ameliorate. What Mr. Gladstone says of the factory system before the law intervened, "that, partly owing to the state of the law, and partly owing to human infirmity and negligence, much was discovered that called for amendment," may be applied in the same words to the labourers' dwellings. The manufacturers were "first of all placed under jealous and microscopic examination, and much criticism was the result. But those employers of labour have now become in many instances, the standard-bearers of enlightened

improvement as regards their relations to their workmen." Let the law subject the dwellings of the poor, and the owners of those dwellings, to "jealous and microscopic examination" of impartial public authorities as a beginning, public opinion will itself, without further measures, effect much reformation; and when the voluntary reformation stops short, then let the law step in and hasten it. It is the duty of the commonwealth to declare that its labours and expenditure to promote the health, the education, and the moral improvement of its people shall not be neutralised by human selfishness and neglect, or any theoretic pedantry for prejudices which have been assumed to be principles of political economy. In a broad point of view, putting aside smaller differences, the duties placed on manufacturers might be imposed on landlords, and what landlords ought to do, but could not be made to do by law, unions could do. Manufacturers once protested against the factory laws as interference with the sacred principle of *laissez faire*, but they have now become the "standard-bearers of enlightened improvement." Let analogous measures be taken with landlords, beginning with those represented by corporations of all kinds, including especially colleges. Although the cost may fall, in the first instance, upon them, as on the manufacturers, the community at last will pay it. The numerous allusions to the dwellings of the labouring poor which have been made during the recess, by leading public men of all parties, prove that the Society of Arts has wisely taken up one of the most pressing questions of the day.

I am, &c., HENRY COLE.

15th October, 1864.

The following are the remarks of Mr. Gladstone:—

The presentation by Mr. Barnes is happily not an isolated act. It is part of a great system, part of a great movement. He is, indeed, the representative, and the honoured representative, of a principle and a tendency which is among the very best characteristics of the age. In this busy, stirring, critical, industrious, enterprising, money-making, money-accumulating age it is well that while these pursuits have full scope given it should not be forgotten that there are other wants and other interests; and, in particular, I call Mr. Barnes on this occasion the representative of a deep and growing conviction with respect to the relation that ought to prevail, and that happily now to a very great extent does prevail, between the employer of labour and the labouring population of the land. I think, ladies and gentlemen, that it is about 30 years since a gentleman of high character and of great ability, employed in the public service in Ireland, created very considerable alarm and apprehension by putting forth in a concise and telling form what was thought the somewhat revolutionary doctrine that "property has its duties as well as its rights." The doctrine was received by many for the moment as revolutionary—as if it were some monstrous conception aiming at the breaking up of society; but that dreaded monster, if such it was, has now become a domesticated idea. It has entered with us into every house, and it lies as quietly by our firesides as if it were the favourite dog or cat of the family. Property has its duties as well as its rights, and the relation of the man who employs labour to the man who gives labour never can be permanently satisfactory or secure if the exercise and practical form of that relation are confined to the mere settling of the cash account of the wages of the man. It is doing violence to the principles of human nature, it is running up a score against ourselves, it is offending against the will and designs of Divine Providence, if we refuse to recognize the fact that moral associations and social and endearing ties of affection belong to, and ought never to be severed from, the relation between the master and the workman. Well, now, circumstances brought about a result which at first did not appear to be satisfactory to the manufacturing districts of this country, but which I believe was a matter calling for the

deepest thankfulness. I mean this: the relation of employer and labourer had never been in this country thoroughly and carefully examined until it came to be examined in the case of the factory system. When it was examined into much was brought to light that was highly unsatisfactory. There can be no doubt at all, as a matter of fact, that, partly owing to the state of the law and partly owing to human infirmity and negligence, much was discovered which called for amendment. It does not follow that the state of the factory system even at that time was in any respect worse than the state of the general relations between the employers and the givers of labour throughout the country; but you were first of all placed under jealous and microscopic examination. Much criticism was the result; bugbears were sent abroad through the country. The idea began to be entertained in many quarters that the factory population was a debased population, and that those who employed them were a set of tyrants or misers; and, moreover, it was believed that there was something hopelessly incurable in the nature of the system, and you will well recollect that the ignominious appellation of white slavery was by many persons in the country applied to it. I don't know that it was a very pleasant process for Lancashire to undergo that examination, but, after all, Lancashire has come better out of it than might have been expected. For what has since taken place?—the laws have been amended, and with the amendment of the law there has come—what? No amendment of the law can of itself secure a wiser, a kinder, a more philanthropic, a more enlightened spirit on the part of the employers of labour, a more orderly habit, a higher intelligence, a stronger confidence, a more affectionate system on the part of those by whom labour is given. It is not too much to say, though I doubt not much may remain to be done, it is not too much to say that something like a moral transformation has passed over the district in which I speak, and in no part of England more than here, in the circumstances of the last few years. I say the manner in which suffering has been met,—that surest test of what constitutes the true man,—has settled the question of the estimation in which the factory population are to be held by the rest of their fellow-countrymen. Now let me turn more closely to the subject that has brought us together to-day. Those employers of labour—I mean the masters of factories—who were first of all placed under critical and jealous examination, have now become in many instances, in instances daily increasing, the standard-bearers of enlightened improvement as regards their relations to their workmen. It is impossible to overstate the importance of this fact. Nothing can be more clearly proved by a long experience than the nature of that commercial power, energy, and enterprise which Providence has imparted to the British nation, be it for good or be it for evil. But I hold it is for good. The people of this country have already become, and are in all likelihood destined yet more extensively to become, workers for the world at large. At this moment, if we are truly informed by the best authorities, of every two loaves of bread that are consumed in this country one is the product of a foreign soil; and perhaps we might venture to say, not with precise accuracy—but for the sake of establishing the parallel I am giving the substantial truth—we might venture to assert that for every two yards of cotton consumed throughout the globe one yard is of British manufacture; if that be so, we must look to the factory system as a system destined for a still further extension, and we might ask ourselves whether we are prepared or mean to recognize it as a legitimate,—nay, I will venture now to say an honourable and distinguished portion—of the economical and social arrangements of the country. Now, ladies and gentlemen, it is not easy, and I am sure you will agree with the sentiment, to make the acquaintance of perhaps 30,000 people in the course of a couple of hours; and yet, with a certain allowance and indulgence to the necessities of public speaking, I might almost venture to say that I have made acquaintance, through

the medium of the demeanour and through the countenances, with the population in the course of this morning of certainly not far short of the number that I have mentioned. No man could see the faces of that population without being aware that, in point at any rate of general intelligence, he had no reason to suppose that they were likely to be in any respect unworthy of the noble British nation to which they belong. Well, but there used to be an idea that loyalty and the factory system did not go well together. I should like to know what has become of that idea. When Her Majesty, in days brighter for her than now, traversed the streets of Manchester, was it possible that anything could exceed the manifestation of loyalty and love that she received from the highest to the lowest of the population? Words themselves would fail me if I were to attempt before you to describe the affectionate attachment which prevailed this entire community as between the people and the occupier of the Throne. Well, but intelligence is a great thing, and loyalty is a great thing, but there are other things which constitute the happiness and well-being of the community at large. Now, there has been in former times an impression abroad that the effect of the factory system was to weaken or dissolve the sacred ties of the family; that it introduced disobedience to nestle like a serpent in the very hearth of the family; that the relations of the young child and the parent and the parent and the child were vitiated and destroyed by the premature independence of your youthful labourers. Now that is a fair description not, thank God, of the state of things, but of the impression which once prevailed with regard to the state of things. Well, now, I think it may be said that, with respect also to this great and vital question, the experience of the last few years has not failed to throw upon it a flood of light. I think it has completely exploded the idea that less attachment is felt by the parent for the child, or less attachment felt by the children for their parents, in the heart of the manufacturing districts than in any other portion of the community. I should humbly presume to say, having had some opportunity of forming a judgment, that I have been astonished to see the strength, the warmth, the unconquerable tenacity of domestic affection among the people of Lancashire employed in manufactories. All these are points upon which I may say that the factory system may very well afford to stand or fall, but I cannot help thinking that there are many things connected with it that may be taken as an example by other classes; take the spirit of order and discipline which pervades our factories, not the mere restraint which is imposed on the labourer while he is within the walls of the factory itself, on the contrary, it is the formation of a habit, and if you ask why it is that tens of thousands and hundreds of thousands can be simply self-governed and self-arranged without outrage, without difficulty, without disorder, without the appearance in almost a single instance of the authority even of the police, it is in a great degree on account of that habit of order and discipline which is to be found within the walls of those establishments. But take a point of still greater importance. If we are to judge rightly the operation of that system, it has this effect, it brings the people together, and they acquire an interest in one another, a public opinion, so to speak, forms itself among them, and that public opinion is favourable to morality and good conduct, and the person who goes astray is felt to have committed an offence against the character of those with whom he or she may be associated in working; but it is not possible to conceive a principle more truthful or more valuable for the real advancement and improvement of the working classes than that that opinion should thus spontaneously, naturally, and healthfully be engendered among them, according to which the order of working men and working women may become, as it were, an effectual minister of virtue, and vice and mischief will be discouraged in their first beginning. I will now turn to another matter, with regard to which the factory system may not,

perhaps, stand so well. It may be said, with truth, that in-door occupation has not a very favourable operation on the physical development of the people. We must speak our minds in an assembly of Englishmen such as this, and it was at one time too true of the factory system that, from defective ventilation and other causes, it was anything but wholesome as regards the bodily health of the population. Now, the bodily health of the people is a matter of vital consequence. When God Almighty made man to be a composite being of body and soul, he intended the welfare of the two to go together, and you could not have in operation a system which should give you a stunted and enfeebled people without finding before very long that the evil effects of that system were likewise leaving their mark on its mental character; but here, also, I trust we may say that a vast improvement has been effected. There is no reason—at least, so I am given to understand, and confidently hope—there is no reason in the nature of things why factory labour should be less favourable to health, when due care is taken, than other in-door labour. I am now at a point when I think we can see the benefit of the munificent endowment which Mr. Barnes has presented to the community of Farnworth. In-door labour is not of necessity unhealthy, but yet it cannot be denied that it requires the counterpoise of outdoor recreation. It is desirable that those who spend the great bulk of their time indoors, whether in factories, in tool-shops, or in any of the other great establishments of industry, should have the means, when their labour is done, of innocent, healthful, and useful recreation. It is monstrous to suppose that it can be the natural condition of society that one portion should live as if they had nothing at all to do except to seek for amusement from morning to night, and that the other portion of society should find itself shut out from recreation altogether. Such a state of things can neither be pleasing to God nor beneficial and acceptable in the sight of man, nor can it conduce to the prosperity of the country and the stability of its institutions. Here is the great fact, recognised by such acts as we are endeavouring to carry out and to place in commemoration to day. Here we have before us a scene in which, as we hope, from generation to generation, the young and old of Farnworth will seek for health and refreshment after the hours of honest labour have come to a close; but it is not only bodily health which is interested in this question, mental health demands that communion with nature should not be forsaken and renounced. This is one of the truths which it has been the obligation and necessity, but likewise the honour and duty, of the present generation to bring forth from darkness into light. I dare say it is a fact that we do not even yet feel that as we ought to do, or give it that effectual application in practice which it requires; but it is profoundly associated with the well-being of mankind. Communion with nature: why, the phrase, if used perhaps so recently as a century ago, would have sounded almost like the accents of an unknown tongue. At any rate, it would have been taken as the mere dream of a visionary enthusiast if it had been supposed that it was a thing to be recommended for the health, recreation, and habitual enjoyment of a vast population. Within that time, however, great changes have taken place. In order to illustrate this point, which is one of deep interest and importance, I may go a little further. It has been long a subject of discussion among learned men whether the ancients, who, as you know, in point of genius reached the very greatest heights of which human nature appears to be susceptible—it has long been a question whether these ancients had any love for nature or natural scenery—which we call landscape. That subject is still keenly discussed; and I do not believe any one can assert that a taste for the beauties of nature, such as we now understand them, was largely developed among the most cultivated nations of antiquity. Departing, however, from the question of natural beauty, there can be no doubt that the communion with nature which takes the form of

natural history—knowledge of plants, trees, and so on—was a thing never dreamed of as forming a part of the patrimony of mankind at large. Some philosopher, giving scope to his penetrating and searching mind, might attempt to register what human knowledge had accumulated on this subject; but one would be laughed at if one were to suppose that it were possible for a Roman or Greek to find pleasure and satisfaction in the familiar communion with nature through the medium of humble and individual objects. Again, it was debated how it came about that in beautiful countries the population did not care for the scenery, and Lord Macaulay, in his "History of England," goes into an argument as to why the beauties of the Highlands of Scotland were so long neglected.

THE LORD MAYOR'S DINNERS.—SIR,—*The Times* recently announced that a City Committee had been appointed to superintend the coming feast of the Lord Mayor's induction to office. I would like to suggest to this committee the idea that these corporation dinners require a reform, and are really very bad, and not creditable to the wealth of the city, and do not gratify the majority of the visitors who eat them. A fine illuminated menu is placed before each guest, but it is notorious that, after serving the turtle soup, it is a mere scramble to get anything else named on the *carte*. I once had to dine off green peas only, although tempted with a long list of all sorts of things, which it was impossible to obtain, yet nothing could I get but peas, whilst I appealed in vain to every waiter who came within reach. The way in which public dinners are given at the *Hotel de Ville*, at Paris, offers some useful suggestions to any valiant reformer in the City. On one occasion when I dined with six hundred people at the *Hotel de Ville*, every guest obtained a first-rate dinner, of excellent quality and variety, and admirably served. And the method of it was this: a complete dinner of soups, fish, *entrées*, *pièces de résistance*, game, &c., was provided for eight persons; the dishes were admirably contrasted with each other; the wines were appropriate to each course; I counted that my glass was changed sixteen times! there were four waiters to every eight persons, who attended to them and no others. This dinner for eight was perfect, and the secret of giving every other person of the company the same advantages simply consisted in repeating the same perfect dinner as many times over as there were parties of eight to be provided for. I advise the City Committee for the next Lord Mayor's day to follow this example. Let them provide for a party of eight persons, the two turtle and another (say white) soups; the turbot and another fish; two *entrées*; the venison and roast beef; the sweets and the ices. Let them avoid the riot and uncertainty of a hundred other dishes named in a menu, and stick to these, and then multiply the fixed dishes by the parties of eight invited. Instead of placing before every one a bottle of burning sherry and handing round only disturbing champagne, let them select a glass of appropriate wine to go with each dish, and offer it to the guest following each dish. Let them insist that each set of waiters attend only to their own party of eight, and not wander off to distant Common Councilmen with the prime cuts of turbot and venison. By following this simple method they may inaugurate an epoch of reform in civic dinners which is extremely needed.*—I am, &c., FELIX SUMMERLY.

THE SQUARES OF LONDON.—SIR,—We have introduced gardening with great effect into our public parks; why cannot it be introduced into some, at least, of our squares. Why should not some of them be thrown open, and laid out with flower-beds, and paths for the people to

walk through instead of round. Take Leicester-square, for example; throw down the rails, lay it out as a garden, and keep it well tended and watered. I have lately been to Paris; and while all around was hot and dusty, the small "Places," with their brilliant verdure and bright flowers, were a charming relief to the eye. There can be no real reason why we cannot have such things here. I simply throw out the idea, in the hope that it may be taken up by some practical inhabitant.—I am, &c., P.

Patents.

From Commissioners of Patents Journal, October 14th.

GRANTS OF PROVISIONAL PROTECTION.

Axle boxes—2328—J. Clark.
Blast furnaces, &c., applying to useful purposes the slag of—2360—J. A. Harrison.
Clocks, means of actuating electric—2362—W. Clark.
Doors, garden gates, &c., latches for—2174—F. Weaver.
Dyeing and tanning—2336—M. Henry.
Engine governors—2384—J. and W. Weems.
Fibrous materials, rollers and wheels for drawing—2386—H. A. O. Mackenzie.
Fibrous substances, bleaching—2326—H. Potter.
Files, machinery for cutting—2355—P. A. L. de Fontainemoreau.
Fire-arms—2330—G. Lister.
Fire-arms, breech-loading—2322—J. H. Walsh.
Fire-arms, breech-loading—2371—J. P. Harriss.
Floor cloth, manufacture of—2340—J. H. Kidd and J. C. Mather.
Fluid meters—2364—H. Bennisson.
Fuel, apparatus for generating gas for—2237—Z. S. Durfee.
Furniture, article of—2368—W. H. Orth.
Gas fittings, chandeliers, &c., representing the glass parts of, on show cards, &c.—2352—J. T. Stroud.
Hair brushing apparatus—2356—E. Ostler.
Hooped skirts—2370—R. A. Brooman.
Life boats—2346—D. Climie.
Liquids, machinery for raising—2348—R. A. Brooman.
Looms—2380—W. Whitehead.
Metal, shears for cutting—2372—I. Parkes.
Minerals, apparatus for working—2293—T. Taylorson.
Ovens for baking, apparatus used in—2379—T. Powell.
Photography, obtaining surfaces in "relievo" and "intaglio" by the aid of—2338—W. B. Woodbury.
Pumps—2374—J. C. Wilson.
Railway crossings—2344—H. Bridgewater.
Railway trains, communication between passengers and guard—2388—C. W. Allen.
Sails, reefing, furling, &c.—2358—J. Fergus.
Salt cake, manufacture of—2316—G. Scott, jun., and J. Tudor.
Sewing machines—2366—H. C. Symons.
Ships, apparatus for steering—2376—H. and H. Forbes.
Ships, &c., protecting the sides and bottoms of—2332—W. Larcom.
Throistle spinning, &c., apparatus for effecting the drag in—2382—A. Pemberton and J. Ford.
Vehicles, disconnecting lever to release—2321—J. R. Hofmann.
Vehicles, registering apparatus applied to—2148—W. Clark.

PATENTS SEALED.

948. W. Ovenden, sen., and W. Ovenden, jun.	996. H. Wadkin.
955. J. C. Coombe.	999. H. A. Bonneville.
956. H. B. Barlow.	1000. H. A. Bonneville.
960. A. Priest and W. Woolnough, jun.	1001. H. A. Bonneville.
961. W. Payton.	1011. T. Pepper.
962. W. E. Gedge.	1012. G. Davies.
963. M. B. Cooper.	1016. W. L. Barnes.
964. J. Riley.	1052. E. Taylor.
971. W. E. Gedge.	1068. C. H. Pearson.
974. G. Davies.	1072. T. G. Ghislin.
976. J. E. Spratt.	1500. J. G. Jones.
982. W. G. Cooper & J. Fletcher.	1686. J. H. Johnson.
994. J. Standeven.	1932. A. L. Wood.
	1994. C. Lowe.
	2084. A. Ford.

From Commissioners of Patents Journal, October 18th.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

2542. T. B. Collingwood and A. Butterworth.	2565. C. Wynants.
2558. W. Macnab.	2571. J. Dixon and R. Clayton.
2609. R. Mushet.	2583. W. T. Weston.
2637. R. Mushet.	3124. W. Bell.
2646. C. Brison & A. Chavanne.	2601. P. Robertson.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

2633. G. Rhodes.	2628. F. H. Holmes.
2614. C. C. Alger.	2652. L. Arbel.
2630. T. Restell.	

* This suggestion appears so very practical, that it is hoped it may be adopted at any future anniversary dinner of the Society.—Ed. J. S. A.